

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Steve Ellington <n4lq@iglou.com>
Subject: Re: " CRUMMY " meters
Message-ID: <Pine.SOL.3.91.951121111759.19859D-100000@iglou2>

I hereby nominate the Original Globe Scout as having the crummiest meter.

Hit the key, the meter goes (((((BOING)))))). Quickly you try and dip the plate current while watching the meter for minimum shake. Try the EICO 720 too. This one really played a tune. Ten Tec has helped continue the tradition. The Hercules amp's current meter flopps like a decapitated chicken then finally sticks requiring a thump to free it up.

Steve Ellington N4LQ@IGLOU.COM Louisville, Ky

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: clarke@next3.acme.ist.ucf.edu (Thomas Clarke)
Subject: Re: " CRUMMY " meters
Message-ID: <9511211806.AA18160@next3.acme.ist.ucf.edu>

Oh, "CRUMMY" as in not very good!

I thought you meant "CRUMMY" as in the two meters I have from SX24's whose cases have split apart, sort of banana peel fashion. I was beginnig to think this afflicted old transmitters as well as old Hallicrafters receivers.

By the way does anyone have a fix for this? I've been working up to gluing the staves of the case back together, but maybe there's a better fix?

Tom Clarke
KE4VFH

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: berg stephen erik <z931086@corn.cso.niu.edu>
Subject: Re: " CRUMMY " meters
Message-ID: <Pine.3.89.9511211325.A7335-0100000@corn.cso.niu.edu>

Meters are a favorite place for manufacturers to scrimp. I once worked on Motorola's ill fated (wince) cb radios. Most of the quality rejects I was charged with were sticky s meters. Frequently, they would work for a while and then stick. They used an edgewise meter that must have used rosin on the bearings. Then there was the meter in my used Gonset g-76. That arrived from a prominent ham radio store, fully reconditioned, with the meter

movement cracked off from the face. I epoxied the meter back together, and it has held for 30 years. There was also a direct short to ground in the 265 volt line in that radio. Reconditioned, all right.

73,
Steve WA9JML

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Steve Ellington <n4lq@iglou.com>
Subject: Re: " CRUMMY " meters
Message-ID: <Pine.SOL.3.91.951121160832.13028C-100000@iglou2>

> I thought you meant "CRUMMY" as in the two meters I have
> from SX24's whose cases have split apart, sort of banana
> peel fashion. I was beginnig to think this afflicted old
> transmitters as well as old Hallicrafters receivers.
> By the way does anyone have a fix for this? I've been working
> up to gluing the staves of the case back together, but maybe
> there's a better fix?

I just can't pass this up. You have taken an old, worn out SX24 and converted it to a 2 meter rig capable of operating SPLIT. Talk about unsightly mods!

Steve Ellington N4LQ@IGLOU.COM Louisville, Ky

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "Cal J. Eustaquio" <ceustaqu@violin.aix.calpoly.edu>
Subject: "Crumbly" meters
Message-ID: <Pine.A32.3.91.951121075515.69323C-100000@violin.aix.calpoly.edu>

Hi gang.
Just a querie for some historical information. About these "crumbly" meters often found in some of the "low end" vintage gear. The culprits seem to include the Challenger, Navigator, Heathkit AT-1, DX-35, Knight T-50 (recently mentioned), and whatever else. Any reason why such shoddy pieces of equipment would be attached to otherwise fine pieces of boatanchor history? 73's. Cal, N6KYR.

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "James C. Owen, III" <owen@apollo.eeel.nist.gov>
Subject: RE: "Crumbly" meters
Message-ID: <40613.owen@apollo.eeel.nist.gov>

In message Tue, 21 Nov 1995 10:05:54 -0600 (CST),
"Cal J. Eustaquio" <ceustaqu@violin.aix.calpoly.edu> writes:

Any reason why such shoddy pieces of equipment would be attached to otherwise fine pieces of boatanchor history? 73's. Cal, N6KYR.

Cost was the bottom line then as now and the meter was (if a quality unit) was one of the most costly items. However, as you increased up the price ladder the quality of the meters increased. My DX-100B has a Simpson meter, top notch quality. 73 K4CGY

James C. Owen, III

National Institute of Standards & Technology (NIST)

Bldg 225/B360

Gaithersburg, MD 20899

1-301-975-5623

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Mark60195@aol.com
Subject: 1st scope project(s)
Message-ID: <951121200442_30104072@emout06.mail.aol.com>

Last sunday I attended a auction and picked up a HP 130B scope in what appears to be working condition and a Tek 545A with a Type 53/54D plugin (?) that need tubes. I understand that there are many types of plug-ins for these scopes and was wondering if this particular one is of any use? If so, I'll retube it otherwise I guess I'll be looking for another (recomendations?). The 545A looks intact with the exception of a broken tube that appears to have some type of thermal relay in it. Is this scope worth rebuilding and where might I find a replacement relay, power cord and probes for it. (Yes, I'm going to order the "Restoring a classic" book). Also could anyone tell me anything about the HP scope? Even if I can't fix up either, for \$21 I think I now have a life-time supply of 12AU6's and 12AX7's! Thank you!

Mark Lakowski
WB9PPL

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: w7ni@teleport.com (Stan Griffiths)
Subject: Re: 1st scope project(s)
Message-ID: <199511220516.VAA20187@desiree.teleport.com>

On November 21, Mark said:

>Last sunday I attended a auction and picked up a HP 130B scope in
>what appears to be working condition and a Tek 545A with a Type
>53/54D plugin (?) that need tubes. I understand that there are many
>types of plug-ins for these scopes and was wondering if this particular
>one is of any use? If so, I'll retube it otherwise I guess I'll be looking
>for another (recomendations?).

The D (or earlier 53/54D) plugin is useful, but not the most useful. Its greatest claim to fame is its 1 mv sensitivity. You pay for that sensitivity with bandwidth. It only goes up to two MHz. The tubes that are missing are probably checked and matched pairs. These were usually checked and matched to reduce the time required by a service technician to find tubes that would work in the field from tubes taken right off the shelf. If you have a bunch of tubes to choose from, you can probably find some that will work without having "official" checked pairs. It may not be worth the trouble, however.

By far, the most popular plugin for the 545A was the CA. It isn't as sensitive as the D (50 mv instead of 1 mv) but it is dual trace and it does have a bandwidth of 24 MHz. \$20-25 is a fair price to pay for a good one but you can often get them for less. Since you say you are going to get my book, there are pages dedicated to this very subject so there is no use repeating it all here.

>The 545A looks intact with the exception
>of a broken tube that appears to have some type of thermal relay in it.

That is a thermal relay. It is a 6N045T by Amperite and I think I have a couple of spares. Let me know if you want me to send you one. It is used to delay the application of full B+ until the tubes have had 45 seconds to warm up.

>Is this scope worth rebuilding and where might I find a replacement
>relay, power cord and probes for it. (Yes, I'm going to order the
>"Restoring a classic" book).

Yes, in my biased opinion. Already mentioned the relay. I have a power cord I can send also and I still have some used P6105 probes that will work with a CA for \$25 each.

>Also could anyone tell me anything about the HP scope?

You got me on this one. There has to be an HP expert out there somewhere . . .

>Even if I can't fix up either, for \$21 I think I now
>have a life-time supply of 12AU6's and 12AX7's! Thank you!

Threatening to part it out SHOULD wake up somebody!

So Mark, here's the bottom line:

Book	= \$19.95
Delay relay	= 2.00
Power cord	= 3.00
2 ea P6105 probes	= 50.00
Shipping and Handling	= 5.00

Total = \$79.95

Your personal check is OK to:

Stan Griffiths, W7NI
18955 S.W. Blanton Street
Aloha, OR 97997-1230

Good luck on your scope project. I've got lots of free advice, just ask.

Stan W7NI@teleport.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Michael.J.Knudsen@att.com
Subject: Re: Adventurer / T-50: Twins?
Message-ID: <9511201931.AA04285@bock.ih.att.com>

Geez -- this must be the only case where Allied/Knight ever sold a kit with decent physical design and rugged components.
Never thought I'd see Jonsohn and Knight get together.
I guess Knight supplied the meter, and Johnson the rest of the parts :-)
73, mike k w9nrd

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Bill VanAlstyne <bill@starquest.com>
Subject: Re: Adventurer / T-50: Twins?
Message-ID: <199511210611.AA21762@cruz.com>

At 09:07 PM 11/20/95 -0600, Michael.J.Knudsen@att.com wrote:

>Geez -- this must be the only case where Allied/Knight ever sold a kit
>with decent physical design and rugged components.
>Never thought I'd see Jonsohn and Knight get together.
>I guess Knight supplied the meter, and Johnson the rest of the parts :-)

Hmmm... Sounds like the same meter to me. Paul Bock wrote earlier today:

>and clean
>out and check the meter (now *THERE's a piece of work for you:
>No damping, no zero adjust, pivot barely supported between a
>cheap brass stamping...)

That's the *Adventurer* meter he's talking about. Just exactly how the so-called "Knight" meter was made. :) There's a rear view of the meter in one of the ER photos, and it looks exactly like the Knight meter, right down to the .005 (as I recall) ceramic disk cap across the terminals. Now that I think about it, I don't think the meter bezel was any different either, except for the paint color. Of course the silkscreened meter dial face had the Knight logo instead of the Johnson logo...

Nope, the more I look at those Adventurer pictures in ER, the more I think the T-50 *was* the Adventurer, lock stock and barrel. I'll bet Johnson licensed the design and sold the parts for it to Allied. Wonder how long Allied sold it? I was trying to remember when I bought it... It was before I got my Novice license, so it must have been 1960 or 1961. The ER Adventurer article says Johnson sold the rig until 1964, so there were at least three years there, maybe more, when both Knight and Johnson were selling it. According to ER, the Johnson rig sold for \$54.95. I remember to this day what I paid for the T-50, because at age 14, I had to earn every penny of it, one penny at a time: \$42.95. So you paid almost 22% less for the same rig 'cuz it wasn't maroon and purple and didn't have a viking on it. :)

Bill VanAlstyne N6FN
bill@starquest.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "James P. Rybak" <jrybak@mesa5.Mesa.Colorado.EDU>
Subject: Re: Adventurer / T-50: Twins?
Message-ID: <Pine.3.89.9511210808.A21586-01000000@mesa5.mesa.colorado.edu>

Bill,

When I was a Novice (1959), I had an Adventurer and my buddy had a T-50.

My recollections are a little bit foggy, but I kind of remember that the main VISIBLE difference between the T-50 and the Adventurer was in how the front panel fit with the cabinet. The Adventurer panel had a bent lip (90 degree angle) around it while the T-50 panel was kind of recessed into the front of the panel without the lip. The quality of the paint and silk-screening on the Adventurer was somewhat better than that on the T-50, but then it should have been for the price difference. Both units

had a million screws holding the panel to the cabined but the T-50 was a little easier to put back together again due to the differences in the ways the front panels fit to the cabinet and the very tight fit of the Adventurer panel. If there were any electrical differences, they also were minor. Taking these things apart was not something you wanted to do too often.

You're right on the meters. Both used a very cheap, crumby meter. My Adventurer meter used to "stick" periodically. I would bang it with my thumb and middle finger, much as one would try to "flick" something off of a table surface. One day I broke the glass on the meter as a result of doing this. I replaced the meter with a d'Arsonval meter and never had any more problems.

Jim Rybak W0KSD

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Bill Sorsby <bill.sorsby@dlep1.itg.ti.com>
Subject: BoatAnchors Ahoy Matey!
Message-ID: <199511202054.0AA08256@dlep1.itg.ti.com>

Greetings,

My Boat Anchors are celebrating this afternoon!

I am proud and relieved to report that I received word today from the lawyer's office that the antenna prohibiting deed restriction my lot was previously encumbered with is now history. ;^) I still must obtain an antenna permit from the city of Grapevine, but this should be a mere formality since, while the city restricts all antennas, they acknowledge the FCC directive to impose minimal obstacles to construction of ham radio antennas. The city's 65' antenna height limitation causes me little concern.

This culminates several months of effort obtaining the requisite neighborhood approval and additional effort from Laurance Priddy, K5LP, ARRL Volunteer Counsel in Fort Worth, who graciously donated his time to the effort.

It may take a few weeks yet before I have a decent antenna up, but it won't be long.

As someone else posted here recently: Life is good!

Regards,
Bill Sorsby, N5BU

P.S. If anyone is interested in the process involved, I'll be happy to respond with details via e-mail.

bill.sorsby@dlep1.itg.ti.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Terry Burge <terrybu@netman.ENS.TEK.COM>
Subject: Re: BoatAnchors Ahoy Matey!
Message-ID: <9511202103.AA20802@netman.ENS.TEK.COM>

Congratulations Bill,
Nice to see we won one.
Terry
KI7M

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: "James C. Owen, III" <owen@apollo.eeel.nist.gov>
Subject: RE: BoatAnchors Ahoy Matey!
Message-ID: <58035.owen@apollo.eeel.nist.gov>

In message Mon, 20 Nov 1995 14:59:34 -0600 (CST),
Bill Sorsby <bill.sorsby@dlep1.itg.ti.com> writes:

>
> Greetings,
>
>
> My Boat Anchors are celebrating this afternoon!
>
> I am proud and relieved to report that I received word today from the
> lawyer's office that the antenna prohibiting deed restriction my lot was
> previously encumbered with is now history.

Congrats. Bill It's good to hear some good news for a change. 73 K4CGY
James C. Owen, III
National Institute of Standards & Technology (NIST)
Bldg 225/B360
Gaithersburg, MD 20899
1-301-975-5623

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: David Stinson <72227.1640@compuserve.com>
Subject: EKKK! There's a RAT in the house!
Message-ID: <951121132744_72227.1640_EHM28-1@CompuServe.COM>

Time to break out the snap-traps and cheese? No, this is the kind of RAT I've wanted in my house since I was about twelve.

A thoughtful and generous soul from our BA group sent me a hot tip. A fellow in Tucson had just posted 25 command set receivers for sale on the local packet BBS. By the time I rang the phone, he had 18 left. All of the units had been modified to some extent, but the modifications had been done in a thoughtful manner and all but two were fully recoverable.

Then he spoke of one special unit, and my eyes got wide. "Make me a price on the whole lot." I said. I flew to Tucson last weekend. (Ever try to lug a carry-on bag full of old radios onto a plane? "Yes, officer. Antique radio equipment. Yes, the wires do hang out sometimes. No, I can't make them play for you. No, that's a tubular capacitor, not a blasting cap.")

The CBY-46083 RAT receiver is not quite the Holy Grail of command set collecting, but it's certainly a runner-up. My unit is serial #3. On June 24th, 1939, the U.S. Navy Bu. of Engineering signed contract #67258 with Aircraft Radio Corporation of New Jersey. ARC was to produce 100 units. Less than 150 RAT receivers were produced, compared to half a million BC-453/R23 LF units and 200,000 3-6 MC jobs. It's probably a safe bet that less than 50 RAT receivers are left in all the world. Most have met their fate in the dump, victims of Packratt's Disease.

First designed in 1935, the unit tunes 13.5 to 20 MC, with an IF of 4200 KC. The RAT is painted black wrinkle, and looks almost exactly like later command set receivers. The antenna post, rather than the familiar spring-loaded connection, has a conical insulator with a nut-and-washer binding. The nomenclature plate is black laquer with silver plating. The rear chassis markings indicate the contract number, serial number and release date with the familiar yellow navy "U.S." anchor. This unit was turned over to the navy in October of 1940. The front adaptor unit has original volume and mode controls, and has a matching serial number plate (#3) at the bottom left.

Internally, the unit looks almost exactly like any command set receiver, which is a tribute to the design team. All tube sockets are white ceramic, rather than the later phenolic. The connections are covered with laquer. Rather than the later bright red, this laquer is almost a wine color-- translucent. It's makes for a very pleasing look. The

aluminum bottom plate is as shiney as a mirror, and is marked "HARD" and ".040".

Here on BA, we have the collected experiance of over 700 people.
I have some questions of those wiser heads then mine.
What is the proper dynamotor to match with a pre-war command receiver?
The B+ line RF choke (the can under the dyno plug) is missing in this unit. Is this a heinous modification or an engineering change?
Was there a matching transmitter for the RAT receiver?

Thanks for letting me bubble. I've got to go to work, so I guess I'd better wipe the smile off my face...heh heh

73 DE Dave AB5S/7
(lots of) Lost Wages, Nevada

p.s. What **are** the Holy Grails of command set collecting?

9.0-13.5 MC receiver (40 produced).
20-40 MC 8th Air Force mod receiver.
R-113 and R-115 VHF tunable receivers.
T-89 and T-90 VHF tuneable transmitters.
Runners-up: T-15 and T-16 MF transmitters.

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: steve.cornelius@tempe.vlsi.com
Subject: Fe02 and my chassis
Message-ID: <9511211602.AA21910@shark.tempe.vlsi.com>

Hello all,

My NC-303 project is moving along as we speak. Thanks to Nick, I now have a schematic, and things make a little more sense.

One of the major problems I have is a moderate-to-severe case of chassis rust. I know the radio spent some time in Hawaii, and a lot of the corrosion looks to be the result of a film of salt (same for the case, which will be probably get dipped & stripped when the time comes). Underneath, it's clean, but the top really needs some help.

Then it hit me: there are probably two dozen points in the unit where grounds are made either through rivets in tube sockets or terminal strips. The rivets appear to be aluminum too, so some corroded grounds are guaranteed. This could explain the unstable VFO and ALC.

Obviously, the corrosion has got to go...

Can anyone suggest some ways of removing the surface rust topside? I really don't want to completely strip the chassis for a chemical dip, because with this type of construction, I'm afraid it'll never go back together right. Something I can do by hand on the mostly-intact unit is preferred.

I'll probably replace the rivets with plated 2-56 hardware so that individual sections can be removed easily, while being less susceptible to galvanic corrosion than the rivets were.

(I should note here that I'm not shooting for a museum piece. I'd like to keep everything as original as possible, but I want this to be a working, servicable unit too, so the wax caps are getting modern replacements, etc. All the changes are being logged, and the old parts are saved as I go.)

Thanks,

73, steve, aa7xv

--

Steve Cornelius
VLSI Technology Inc., Tempe, AZ, USA
steve.cornelius@tempe.vlsi.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "Ray L. Mote" <rmote@rain.org>
Subject: Re: FS - dynamotors
Message-ID: <Pine.SUN.3.91.951121064808.15705D-100000@coyote.rain.org>

FYI, your dynamotors are:

CW-22209A - GF-11 transmitter power supply

CW-21454A - GF-12 transmitter power supply

Hope you like the old Navy pre-war command sets (equivalent to SCR-183 and SCR-283 but not interchangeable).

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: WJoew@aol.com
Subject: FS: Dynamotors
Message-ID: <951120230313_87035254@mail06.mail.aol.com>

Type 377 with CW-21109A filter unit: 14 VDC to 425 VDC

Type 651 with CW--21454A filter unit: 28 VDC to 425 VDC

DY-2/ARR-2: 28 VDC to 250 VDC

PS-225: 14 VDC to 375 VDC

BM12: 13 VDC to 220 VDC

Your choice \$8 each, plus shipping.

Joe

wjoew@aol.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: WJoeW@aol.com
Subject: FS: Heathkit stuff
Message-ID: <951120231258_87039473@emout05.mail.aol.com>

Heathkit Model AA-151 Amplifier: \$30

Heathkit Model AJ-31 FM Tuner: \$20

Joe

wjoew@aol.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: WJoeW@aol.com
Subject: FS: Test Equipment
Message-ID: <951120231017_87038199@mail04.mail.aol.com>

HP-606A Signal Generator, rough case, good panel, needs repair \$40.

HP-412A DC Vacuum Tube Voltmeter, \$15.

HP-400D AC Vacuum Tube Voltmeter, \$15

General Radio Model 1216-A Unit IF Amplifier: \$10

General Radio Model 1217-A Unit Pulser, \$10

Heath Model V-7A VTVM, \$15.

URM-25E Signal Generator, \$60.

Eico Model 710 Grid Dip Oscillator with all coils, \$25.

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Steve Ellington <n4lq@iglou.com>
Subject: FS: Millen SSB adapter
Message-ID: <Pine.SOL.3.91.951120144200.28919A-100000@iglou2>

This resembles the CE Sideband Slicer. Has 455kc input via coax and audio output terminals. Runs on 110vac. Front panel has upper, lower SSB selection. This should help most any BA on SSB reception. I have not tested this but will be glad to do so if anyone is interested in owning it. Price will be \$50.

Steve Ellington N4LQ@IGLOU.COM Louisville, Ky

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Roy Morgan <morgan@speckle.ncsl.nist.gov>
Subject: Heath AC probe PKW-3-A, info needed
Message-ID: <9511211558.AA07075@speckle.ncsl.nist.gov>

Anchorites,

Anyone got info on: Heath AC Probe PKW-3-A

(It's got 3 diodes, a .001 cap, and a 4 meg resistor - for reading RMS with a 10 meg input meter I'd guess.)

Return e-mail please, I can't read the list regularly -

THANKS.

--- Roy Morgan / Nist North / Building 820 - Room 562 / Gaithersburg MD 20899
(National Institute of Standards and Technology, formerly NBS)
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: BHall88620@aol.com
Subject: Hickok VMK-4 VTVM schematics anyone?
Message-ID: <951121172618_113090226@mail04.mail.aol.com>

Hello y'all...

Recently aquired my first BA (well for a rubber dinghy, maybe, but it has tubes) restoration project. I have aquired several Hickok VMK-4 VTVM's manufactured for Hickok Teaching Systems, Inc. Going to hone my schematic taking, component replacing, desoldering, soldering skills on them. Figured I would like to learn on something less important to me than my Hallicrafters... I'll keep everyone out there informed on how it goes.

Anyone out there have a manual and/or schematic or know of a place that does?

Thanks in advance,
Ben

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "Tim Shoppa" <shoppa@krl.caltech.edu>
Subject: Re: Hickok VMK-4 VTVM schematics anyone?
Message-ID: <9511220128.AA21005@altair.krl.caltech.edu>

> Hello y'all...

>

> Recently aquired my first BA (well for a rubber dinghy, maybe, but it has
> tubes) restoration project. I have aquired several Hickok VMK-4 VTVM's
> manufactured for Hickok Teaching Systems, Inc.

Ahah! I've got several of these too, acquired from yard sales in the late 70's. This is the unit with the funny screw-on probe jack, right? If you didn't get the probe with your unit, I'm pretty sure you need one with a 1 Megohm resistor in it. Somebody please correct me if I'm wrong and what you really need is a 9.09 or 10 Megohm resistor...

> Going to hone my schematic
> taking, component replacing, desoldering, soldering skills on them. Figured
> I would like to learn on something less important to me than my
> Hallicrafters... I'll keep everyone out there informed on how it goes.
>
> Anyone out there have a manual and/or schematic or know of a place that does?

I've never seen a schematic for this actual unit, but if I remember correctly the circuit in the Hickok is almost exactly the same as the circuits you see for VTVM's in many of the vacuum tube manuals. There aren't too many ways to build a basic VTVM, after all! The resistor

chains and meter movement current may be a bit different, but the basic principle has to be the same.

The first step to repairing one of these is to get the balance good enough that you can zero the unit. Then work on DC volts, then AC volts, then finally the ohmmeter part. Most VTVM's had a battery inside for the ohmmeter function; by the time they get to me (after maybe a decade or two of storage) the battery has leaked all over the inside of the case. When you replace it, use a quality battery with a nice metal case - an alkaline is ideal because of their long shelf life. Also what often needs replacement is the clip that the battery is held in by - this is often corroded away completely by battery leakage. In the past I've just gone to Radio Shack and gotten a plastic battery holder and glued it in place, but a more authentic "restoration" would probably involve fabricating a new clip out of metal and riveting it in.

Tim. (shoppa@altair.krl.caltech.edu)

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: JOHN BERENYI <JBERENYI@cc.weber.edu>
Subject: Is this normal for my URM-25D sig gen
Message-ID: <01HXWCTA106A8WW820@cc.weber.edu>

Is it normal for it to drift off freq from 10Mhz and up? A few Kcs is what I'm experiencing. Is this a big deal for alignment purposes?

Also..is it necessary to have the accessories for the generator...I didn't get any.

John

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: dma@IslandNet.com (Jan Skirrow)
Subject: Re: Is this normal for my URM-25D sig gen
Message-ID: <m0tI0TM-0005VIC@island.amtsgi.bc.ca>

>Is it normal for it to drift off freq from 10Mhz and up? A few Kcs is what I'm
>experiencing. Is this a big deal for alignment purposes?

>

>Also..is it necessary to have the accessories for the generator...I didn't get
>any.

>

>John

>

I checked the stability of my 25D from cold start, using an HP digital

frequency counter. From cold turn-on, the 25D drifted as follows:

T=0	Freq: 14.9756
+10 mins:	14.9732
+20 mins:	14.9713
+40 mins:	14.9665
+1 hr:	14.9638
+90 mins:	14.9582
+2 hrs.	14.9555
+2.5 hrs	14.9539
+3 hrs:	14.9526

So, total drift over 3 hours from dead cold was 23 kHz. But after everything was thermally settled down ain't tooo wonderful!), the drift seems to be less than 2kHz per hour. The HP counter should contribute only a very small part of this.

I find the accessories very useful - particularly the antenna simulator and impedance matcher. However, these are not complex devices and you can easily construct your own. The manual has the schematics, as I recall.

Jan Skirrow
VE7DJX

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Michael.J.Knudsen@att.com
Subject: Re: Is this normal for my URM-25D sig gen
Message-ID: <9511211705.AA04704@bock.ih.att.com>

I use a URM-25E (not D) and have never had to "chase" the dial once I set it on freq, even at 30 MC. Maybe the D is less stable?

Do your freq drifts correlate with furnace blower or washing machine going on and off? If so, your VR tube may be bad.

I got absolutely no accessories with mine, not even the lid. Since the 'E' uses stock BNC connectors, I haven't missed them. I do have some scrounged Tek BNC in-line 600 and 52 ohm loads, and BNC-to-test-clip adapters. If I couldn't pull such items out of the trash at work, I'd miss the accessories.

Someone posted a list of the accessories a little while back. I saw a couple items that might be useful, but nothing I really pined after.

Back to drift and alignment. My URM is accurate enough that for most radios I just set the dial at, say, 20 MC and take it as it is.

For critical work, I punch up a Sony digital ricebox SWL portable and tune for max. If the URM drifts, the Sony will tell me (especially with its BFO on). 73, mike k w9nrd

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: rmccarty@deltanet.com (Roger McCarty)
Subject: Looking For...
Message-ID: <9511210311.AA04257@server1.deltanet.com>

Looking for a HeathKit HO-10. Anybody? anybody....?

Also, barely an anchor but will keep a dinghy stationary, looking for the Kenwood 6 and/or 2 meter converters for the R-599.

Thanks

Roger A. McCarty
rmccarty@deltanet.com
ARS KD6CC

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: tech@cs.athabascau.ca (Richard Loken)
Subject: may I suggest some schematic and PCB software
Message-ID: <m0tI175-0018KvC@aupair.cs.athabascau.ca>

Some time back, like a year ago. There was some discourse on electronic CAD packages here on the list. Since then I have gone looking for such a package so I went around polling those in the know and got the following advice.

Generic low end drawing packages like TurboDraw won't remain fun for long. Packages designed to do electronics are expensive but make the job easy.

My two mechanical engineering brothers told me that AutoCAD was a gift from the gods while my electronic engineering friends told me AutoCAD was an expensive pain in the ass since it does all kinds of stuff that us electron pushers don't need. Since then my brothers have "upgraded" their AutoCAD packages, become very peed off, and dropped AutoCAD all together.

Meanwhile I found two electronic software packages: PADS and Tango, and a package which is built onto AutoCAD (this was rejected since it cost as much as AutoCAD just for the add on package). The Canadian Tango distributor was friendly on the phone but never came through with a price or a demo so they soon got forgotten. The PADS American 800 number yielded a friendly salesman, a price, and a demo.

The PADS system costs out like this:

PADS Software Inc: (800)554-7253

PADS-Logic Schematic capture	UU\$750.00	DOS version
PADS-Work Basic PCB design	995.00	

They have DOS, Windows, and Unix versions for several architectures.

I tried PADS and found the human interface demented but after a few days of annoyance I got so I could build schematics quite nicely and map them to a PCB as well until I hit the wall on the demo package. This package in its own wierd way is amazing in what it can do and it has a nice assortment of device drivers for HP HPGL XY plotters and PostScript devices. I could not drive my ancient boatanchor HP7720 HPGL plotter directly but needed to dump the output to a file and filter it through a C programme (I did this on VMS since I don't have a DOS C compiler) to get a drawing. PADS offers a 50% education and just when I was going to lure my employer into sending them CDN\$750.00...

The August (?) QST had a small item that Dover Research was offering a package called CIRCAD for US\$300.00 to licensed amateur radio operators. "Aha!" said I and called them up with my credit card number. Circad retails for the usual electronics CAD price of over US\$1000.00 for a combined schematic, PCB, various text reports package but one of the people involved is a ham and figures we need a deal (he knows hams are cheapskates).

I now have now used Circad for a couple months and can report that it also has a demented human interface but differant from PADS to make sure that I don't get too comfortable. After the learning curve you can draw nice schematics with a lot of flexibility, I have not tried to design a PCB yet since I am practicing on my Drake power supply. Circad sometimes gets wierd but once you understand its caprices you are fine (this involves calling their help line and snivveling). The system runs only under DOS (not windows thank goodness) and has a smaller selection of possible printers/plotters: generic HPGL, HP PCL, some sort of dot matrix printer output, and the ever popular Gerber format used by the Biz. No PostScript... This guy runs the original vanilla HPGL and drives my boatanchor HP7220 directly! Super!

In short, this is a good deal. You get a pretty decent electronics CAD package for not much more than you would pay for a generic DOS drawing pgm.

Holophase Inc
6191 Orange Drive
Davie, Florida 33314
(800)528-6516

I did not properly record the number for Dover Research so you will have to either look in QST or ask Holophase. Buy a copy even if you don't have a

giant obsolete XY plotter in need of a task.

Richard Loken VE6BSV, Systems Programmer - VMS : "...underneath those
Athabasca University : tuques we wear, our heads
Athabasca, Alberta Canada : are naked!"
** tech@cs.athabascau.ca ** : - Arthur Black

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Steve Ellington <n4lq@iglou.com>
Subject: RE: Millen SSB adpt SOLD
Message-ID: <Pine.SOL.3.91.951120195046.25873A-100000@iglou>

Seems to be a demand for SSB adapters.

Steve Ellington N4LQ@IGLOU.COM Louisville, Ky

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: bill@texan.frco.com (William Hawkins)
Subject: RE: Millen SSB adpt SOLD
Message-ID: <9511210637.AA08106@texan.frco.com>

"Seems to be a demand for SSB adapters."

Well, that's it, then. I'll just have to build a CV-591 from scratch. Probably use digital active filters in place of the crystals, though.

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: Radio Recyclers?
Message-ID: <9511211451.AA26978@syseng1.se.melpar.esys.com>

Does anyone have the address & phone # handy?

Thanks in advance,

Paul, K4MSG

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995

From: doonan@cordmc.dnet.etn.com (DENNIS DOONAN X6916 (KG9D0))
Subject: RE: Radio Recyclers?
Message-ID: <9511211444.AA23564@etn.com>

Sure do,
Radio Recyclers
7730 W. National Ave.
West Allis, WI 53214
(414)771-7121

Neil may be closed this Friday.
73 de Dennis, KG9D0

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Bill Sorsby <bill.sorsby@dlep1.itg.ti.com>
Subject: Restriction Abolishment Details
Message-ID: <199511211544.JAA27880@dlep1.itg.ti.com>

Thanks all for voicing congratulations and support.

I've received a number of requests for the details involved in modifying the restrictive covenant prohibiting antennas in my neighborhood. I had expected some interest in the details but perhaps not as much as I received.

Jack has requested a copy for the archives and wants to make it available on the CD he's putting together. I have agreed to this and consequently will spend just a little more time polishing the story and including details which might be of use to others. I'll try to put it together in my spare time within a week or so.

I don't want to mislead anyone into thinking I've discovered some magic formula for abolishing deed restrictions. I haven't. Circumstances permitted modification of the restriction for a small portion of a rather large subdivision and I was able to take advantage of that. The formula used included about equal parts luck, good legal advice, determination and good neighbor relations.

I'll make a short posting on BoatAnchors when I've put the detailed story together.

Regards,
Bill Sorsby, N5BU

bill.sorsby@dlep1.itg.ti.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Michael Crestohl <mc@shore.net>
Subject: REVIEW: POCKET GUIDE TO COLLINS AMATEUR RADIO EQUIPMENT 1946-1980
Message-ID: <199511210119.AA05334@northshore.ecosoft.com>

Hello Everyone:

I just finished reading my copy of Jay Miller's new guide to Collins Radio ham equipment. Thought you might enjoy reading my review:

REVIEW: The Pocket Guide to Collins Amateur Radio Equipment 1946 to 1980
by Jay Miller, KK5IM

Collecting Collins amateur radio equipment has now come of age, with the publication of Jay Miller's Pocket Guide to Collins Amateur Radio Equipment which covers radios and accessories produced from 1946 to 1980. This is an extremely interesting period in the development of the radio art and the beginning of the Single Sideband era, as seen by the many models developed and marketed by the Collins Radio Company of Cedar Rapids Iowa.

Jay dedicated the Collins Guide to Art Collins W0CXX (SK). He notes in the beginning that the Guide is not a history of Collins Radio nor is it a technical treatise on radio engineering as applied to their equipment. It is, he states, intended to provide the Collins user, collector and enthusiast with a complete pictorial guide to the amateur radio equipment produced from the end of the Second World War to 1980.

As a Collins owner/operator continuously since 1967, I have always enjoyed using my KWM-2A and keeping it maintained. This is about my level of technical competence. I also own a 75S-3C, 75A-4, 51S-1 and a military surplus KWM-2A that is awaiting my attention. When I heard about the Collins Guide I was most anxious to see it.

Jay and his associates, including Contributing Editor Butch Schartau K0BS did not disappoint me. The Guide is indeed pocket sized and is wire-bound which means that it will lay flat on a table. Both front and back covers are laminated for durability. Equipment is arranged pretty much in chronological order with professional-quality photographs and illustrations along with descriptions and information about the piece of equipment shown. There's a beautiful picture of the famous KW-1 transmitter on page 22.

The Collins Guide also includes some technical information, such as rear panel collections, crystal information, tube lists of A-line and S-line equipment and information on mechanical filters.

As mentioned earlier I was very pleased with the Guide. It is indeed a beautiful job! It is an important reference work as well as an easily read pictorial history of one of the major players in the development of ham radio communications technology and folklore. I consider the Collins Guide to be an essential information source for anyone wanting to know more about these wonderful radios!

%T The Pocket Guide to Collins Amateur Radio Equipment 1946 to 1980
%A Jay H. Miller, KK5IM
%I Trinity Graphic Systems
%C 5402 1/2 Morningside Ave, Dallas TX 75206 1-800-233-0484
%D 1995
%O \$19.95 plus \$3.00 P&H USA, \$4.00 Canada/Mexico, \$6.00 foreign
%G Library of Congress Catalog Card Number 95-090632
%P 104 pages, wirebound
%K Amateur radio equipment, Collins Radio Company

(C) 1995
Michael Crestohl
Nahant Massachusetts USA
mc@shore.net

DISCLAIMER: I have no interest, financial or otherwise, in the success or failure of the book or materials reviewed herewith, nor have I received any compensation (other than a review copy requested by me) from anyone who has. All opinions expressed are strictly my own.

Other Internet and Aviation book/software reviews by me can be obtained by anonymous FTP from: x2ftp.oulu.fi in the /pub/books/crestohl directory.

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: "Joseph J. Curry" <71407.1774@compuserve.com>
Subject: S-line Rack Mounts
Message-ID: <951120185115_71407.1774_FHV104-1@CompuServe.COM>

Do any of you Collins fans out there know about new Collins rack mounts for the S-line? I seem to remember that someone was currently manufacturing them.

I could sure use a set of rack mounts for my S-line. Any and all information would be appreciated.

Respond via e-mail to 71407.1774@compuserve.com

Thanks,

Joe KE6LFT

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "Gary H. Harmon, Jr." <gharmon@legend.txdirect.net>
Subject: Sealed Relays
Message-ID: <9511220204.AA26563@legend>

4 ea sealed relays, metal case, with a 8 pin octal plug.
C.P. CLARE & CO.
SEALED RELAY
RP-3718-G163

2 ea enclosed relays, plastic case, with a 8 pin octal plug.
POTTER & BRUMFIELD
KRP11A6?

MILWAUKEE RELAYS INC
105 DPDT
10A 115VAC

Anyone need them for the postage? GARY

=====

Gary H. Harmon, Jr., K5JWK	gharmon@txdirect.net
6302 Robin Forest	K5JWK@K3WGF.STX.USA.NOAM
San Antonio, TX 78239	

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: soft startup philosophy and more
Message-ID: <Pine.ULT.3.91.951120160741.15596C-100000@admin.aurora.edu>

On Mon, 20 Nov 1995, Richard Loken wrote:

> While I am playing head games with a home brew Drake power supply and thought
> a soft startup circuit would be nice.

Back when I was in the TV repair biz, many sets had a "surgistor" in series with the power transformer primary. This was mainly in early color sets with MANY tubes (all those paralleled filaments were mighty low resistance when cold). This "surgistor" was merely a thermistor that would quickly drop down to milliohms, once power was turned on. It looked about the size of a dime, but maybe 1/8 inch thick, with the wires attached to each side.

In my linear amp (pair of 4-400A's - a reworked Johnson desk KW) I use 3 thermal time delay relays. The first one shorts out a 50 ohm 50 watt resistor that is in series with the filament transformer primary, after 5 seconds. The 2nd one keeps the plate transformer primary open for 2 minutes. When plate primary is applied, it is thru an old 600W electric heater element. 5 seconds later the 3rd time delay shorts out this resistor. Many broadcast rigs used a similar scheme so they could be remotely controlled easily.

> -----

>

> And thats not all... I have 350V DC and I need 250V DC so I was thinking of
> using a nice healthy pass transistor and a stack of zeners to get the voltage
> down to something sensible. Alas, a short would kill it so maybe I should
> speculate on something like an LM317 lifted very high off the ground...

I would stick to something like a VR-105 and VR-150 in series.

73 de Bob, K9EUI

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: bill@texan.frco.com (William Hawkins)

Subject: Re: soft startup philosophy and more

Message-ID: <9511202235.AA07850@texan.frco.com>

Bob sez,

"I would stick to something like a VR-105 and VR-150 in series."

So, Richard, if you don't want to punch holes, you could tape the two tubes together in opposite directions and have an axial lead hollow state zener diode that doesn't need a heat sink. Better use glass tape, though.

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: jml@spider.lloyd.com (Jim Lockwood)

Subject: Re: soft startup philosophy and more

Message-ID: <m0tHg5d-000Ts6C@spider.lloyd.com>

At 01:52 PM 11/20/95 -0600, Richard Loken wrote:

>While I am playing head games with a home brew Drake power supply and thought
>a soft startup circuit would be nice.

>

>The minimum would be a resistor in series with the primary of the power
>transformer which would be shorted after a half second or so.

>

FWIW, my solution to this same problem has been to series in-rush current limiters (from Digikey) with the transformer primaries. I've done this to three rigs that I can think of at the moment: One of my GSB-100s, my GSB-201, and my SR-500.

The results have been satisfying. All three of these rigs used to turn on with an unsettling, audible "whump". Now they turn on quietly. On the GSB-201 amplifier, I can watch the HV come up and see visual evidence of the current limiter at work: It actually takes about a second, maybe two, for the HV to reach steady state.

Being the essence of simplicity, I am fond of this technique as a solution to the problem of soft starting old rigs.

>I wonder if in the ideal world that one would leave the B+ transformer
>disconnected for several seconds after the filament supply comes up.

It seems to me that this is a Good Idea, independent of whether or not it makes sense to add soft start circuitry. Why? If you run solid state rectifiers, you get the full HV on the tube anodes before the cathodes have come up to temperature. Every source I have that expresses an opinion one way or another indicates that this is a Bad Thing that shortens the useful tube life greatly. If I were adding a time delay between filaments on and HV applied, I would probably stretch it out to a minute or more, to allow the cathodes to reach full temperature.

FWIW....

Jim - km6nk

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: Bob Roehrig <broehrig@admin.aurora.edu>

Subject: Re: soft startup philosophy and more

Message-ID: <Pine.ULT.3.91.951120200358.26813C-1000000@admin.aurora.edu>

On Mon, 20 Nov 1995, William Hawkins wrote:

> Bob sez,
> "I would stick to something like a VR-105 and VR-150 in series."
>
> So, Richard, if you don't want to punch holes, you could tape the two
> tubes together in opposite directions and have an axial lead hollow
> state zener diode that doesn't need a heat sink. Better use glass
> tape, though.

Hey Bill, I like that! :-)

Don't forget the smaller 7 pin regulators, like the 0A2 / 0B2 jobs. You can always mount them on "L" brackets under the chassis. Treated properly, they last a lifetime.

Here's another idea - How about using 4 NE-2 neon lamps in series as a reference tied to the grid of a 6080 or some other series pass tube??????????

73 de Bob, K9EUI

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: berg stephen erik <z931086@corn.cso.niu.edu>
Subject: Re: soft startup philosophy and more
Message-ID: <Pine.3.89.9511202158.B3604-0100000@corn.cso.niu.edu>

On Mon, 20 Nov 1995, Jim Lockwood wrote:
snip

>
> FWIW, my solution to this same problem has been to series in-rush current
> limiters (from Digikey) with the transformer primaries. I've done this to
> three rigs that I can think of at the moment: One of my GSB-100s, my
> GSB-201, and my SR-500.
>
> The results have been satisfying. All three of these rigs used to turn on
> with an unsettling, audible "whump". Now they turn on quietly. On the
> GSB-201 amplifier, I can watch the HV come up and see visual evidence of the
> current limiter at work: It actually takes about a second, maybe two, for
> the HV to reach steady state.

>
> FWIW....
>
> Jim - km6nk
>
>

Could you post some more information on these? It sounds like a good mod for my ancient treasures.

Tnx es 73,

Steve WA9JML
z931086@corn.cso.niu.edu

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: FRANCIS4@AppleLink.Apple.COM (Francis, Dexter)
Subject: SX-25 and HT-32A Info needed
Message-ID: <817011385.2793252@AppleLink.Apple.COM>

Greetings all -

Well, it's amazing what a mild case of the flu will do to create a bit of spare time. Now I'm in need of a schematic for the Halli SX-25 Super Defiant and the manual for the HT-32A.

The Defiant is just a matter of sorting out the tone control, BFO and audio output sections.

The HT32A is another matter. When powered up a nasty buzz develops in one of the transformers and the finals get red even when the main power is just turned to standby. I noted that there is a socket on the back panel which I believe is for external/remote control, but mine doesn't have any sort of plug in it.

Any suggestions as to the possible problem, particularly if it's just a missing jumper plug for that socket on the back, are gratefully accepted.

As usual, I'll gladly cover for copy and postage costs for the schematics.

-df

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: FRANCIS4@AppleLink.Apple.COM (Francis, Dexter)
Subject: SX-62 Schematic needed...
Message-ID: <816905723.1131730@AppleLink.Apple.COM>

Greetings all -

I've decided to clean up the SX-62 and could use a copy of the schematic so I can un-do the non-standard audio output transformer.

If anyone can oblige with a clean copy, I'd be most appreciative.

-df

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: bill@texan.frco.com (William Hawkins)
Subject: Tek 535 is operating
Message-ID: <9511210029.AA07903@texan.frco.com>

The sweep problem turned out not to be a problem. Turned up the stability, and it took off. Maybe it just needed good power supply voltages. Then I tried some plugins, but none worked quite right and all seemed to have about 70% gain. The old 53C unit had a dead channel, which was caused by a bad 6BQ7A. The CA unit has really noisy Variable gain pots, one of which turns 360 without a stop. Shut it off and went to worry about all the things that could cause loss of vertical gain.

Next time, overcame my distrust of high voltage enough to measure the minus 1350 test point. It was about 1700 volts, and the HV Adjust pot was fully CW. Came back to 1350 just fine, and that cured the vertical gain problem. Both Stan and Hank have said not to do anything until the power supplies are correct, and that includes the HV.

Think I'm ready to calibrate it now, at least with the 53C. Looks like I'll need a plugin extender, or a pair of Amphenol connectors. Could also use a manual for the 53C. The one I got from Deane Kidd was for the 53C/54C, which is not like the 53C - more like the CA.

Bill Hawkins bill@bvc.frco.com 612 895-2085 Minneapolis, MN USA

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Henry van Cleef <vancleef@bga.com>
Subject: Re: Tek 535 is operating
Message-ID: <199511210954.DAA05935@zoom.bga.com>

Glad to hear the scope is now perking away. Yes, getting the power supplies all in spec is half the battle.

The scope gain, at pins 1 and 3 of the plug-in, should be set at 100 mv./cm. Before you do this, check electrical centers. Put a Simpson meter across the vertical plate connectors on the CRT, adjust for zero volts, and adjust the little plastic cam on the graticule to center the graticule on the display. That's what the cam is for. Then, move your meter to the plug-in connector, and adjust for zero there. The trace should be close to the center. There were manufacturing specs for offsets in the amplifiers, but I don't have the numbers. If you've got trace compression (i.e, the gain goes down) when you move a 1cm high display around the CRT, you've got imbalance problems. A 580-series has built-in compression on the outer two centimeters---learn to live with it. The early 545's were also likely to have this problem as well.

Best way to set the gain at the plug-in connector is to zero the meter, then move over as many centimeters or as many hundreds of millivolts (whole numbers) as you have range to move. This will multiply any error enough to make it easy to see. Adjust the vertical amplifier gain pot to get as close to 100 mv./cm. as you can. If you have one of the test plugins like a TU-7 or a 1M1, there is an input jack for feeding the calibrator signal in to get the 100 mv/cm without having to measure the voltage.

Make sure the calibrator is set properly. The calibrator test point, on the right side of the lower chassis, should be set to 100 volts DC +/- nothing, with the calibrator turned off. Don't rely on a Simpson meter's calibration for this. Find a good source of 100 volts and see what your meter reads. Checking a few 90 and 105 volt VR tubes and interpolating between the readings will give some reasonable accuracy (I use an HP 412A, which is "dead on" at both 100 and 150 volts). The calibrator attenuator uses 1% resistors in series. To check the attenuator using a DC meter, pull out the calibrator oscillator (usually a 6U8 right behind the front panel) and turn the calibrator range switch through its positions, measuring DC levels. Unless the calibrator is sick, the attenuator is more accurate than most meters, so this check is more a test of meter calibration unless you've checked out your meter carefully.

Plug-ins? Almost every one that I have plugged in cold hasn't positioned properly. Usually, I get good results from centering the "vertical position range" control, then adjusting DC balance to get the trace on screen. Finish off by adjusting the DC balance control for no motion when you turn the "variable" pot. You should end up with all the positioning and DC balance pots somewhere near center. Note that this center is the electrical center of the vertical amplifier input, checked above. If you can't get centering, walk through the plug-in to see what's imbalanced. Things vary somewhat between plug-ins, but the general configuration is a cathode follower feeding one side of a phase splitter, and paraphase stages down to the output. One grid of the phase splitter is connected to the DC balance pot, and the two grids should be at equal voltages. On the multitrace plugins, the switching diodes can also be involved in an imbalance condition. On dead tubes in plug-ins, keep in mind that the letter series plug-ins have a 75 volt 150 ma. heater string. On the simpler ones like the G and K, all the tubes are in that string. Some of the more complex plug-ins have some tubes powered by 6.3 VAC. Remember that scopes with delaying sweep have two tubes in the delaying sweep in this string as well.

So far as I know, all the tweaks and the underchassis on all the letter series plug-ins are accessible without a plug-in extension if you take the left side and bottom covers off the scope. Of course, you'll have

to lay the scope on its side. To get some access to the top and right side you can remove the plug-in compartment shields fairly easily, although the "access" is generally "contortion." There are some test points and tweaks on an H on the top of the plug-in, and half the circuitry in a 1A1 is on the right side. The 82 and 86 have tweaks in the X10 amplifier on the right side (note for 580-series owners). Fortunately, those tweaks generally don't need adjustment in the field.

--

Hank van Cleef vancleef@bga.com vancleef@tmn.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: w7ni@teleport.com (Stan Griffiths)
Subject: Re: Tek 535 is operating
Message-ID: <199511211418.GAA25308@desiree.teleport.com>

>The CA unit has really noisy Variable gain pots, one of
>which turns 360 without a stop.

The very latest version of those pots had a detent but no stop. It should be a white plastic pot with a grey cover. You can clean all versions those pots by very carefully popping the cover off. I use a small screwdriver, insert the tip near the mounting screw, and carefully rotate it until the cover pops off. I have always cleaned them with a cotton swab and a little WD40 but I have learned there is better stuff to use. I now own a bottle of Deoxit but I haven't tried it in this application yet. Don't forget to clean the wiper contact on the cover itself.

Stan W7NI@teleport.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: w7ni@teleport.com (Stan Griffiths)
Subject: Tek Broken Pots
Message-ID: <199511211418.GAA25097@desiree.teleport.com>

Hank van Cleef said:

>Another question: What do you do with those dratted little variable
>gain pots where the delrin plastic cracks? I have glued up two or
>three of them with "super glue," and they seem to be OK. But it is
>pretty hard just to glue the plastic piece without getting the setscrew

>and the shaft, too.

Yes, I know the problem. I think you are talking the Tek-made pots that are generally used as vertical front panel variable gain pots. They made more than one variety of them. The earliest are black with translucent white plastic covers. Next came the all white ones and finally the white ones with grey covers. They all suffer from cracking plastic particularly around the set screw. I think you have the right answer with glue. Maybe not the right glue, however. I am still experimenting with the best fix for this problem. I have found a plastic glue that works great on some plastics. It is a clear, very thin liquid that you brush on both surfaces to be joined. You immediately press the surfaces together and hold for 10 seconds. Let set for 2 hours.

In the case of those pots, I remove the pot completely from whatever it is installed in so I can clamp the cracked plastic with a small "C" clamp. I think it is best to remove both the shaft and the set screw and reinstall them after the glue has set. I think that what happens is that the liquid is only a solvent that is melting the surface of the plastic and fusing it to the other surface. Little or no material is added so the shaft should go right back in and so should the set screw.

I don't remember the name of the stuff I am using but I can look on the bottle if you want to know. It comes in a bottle about the size of a small bottle of model paint and, if I remember right, I bought it at a model and hobby store. I do know this: I glued the bridge of my glasses together with it and they stayed together for a year. I was satisfied with that.

I don't think it will work with all plastics because it won't dissolve all plastics.

I couldn't stand it. I just ran out to my shop to read the label: "Testers Plastic Cement No. 3502. Contains Methyl Ethyl Ketone."

Like I say, the jury is still out on this stuff for this application. Your inputs would be appreciated.

Stan W7NI@teleport.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: scott@hps1st.lvld.hp.com
Subject: Thanksgiving Day AMI Bash
Message-ID: <199511211744.AA011385869@hpcsos.col.hp.com>

A final reminder:

Don't forget to get up early Thursday morning and warm the filaments for the Second Annual AMI Thanksgiving Day Bash. Net control K00J, Greeley Colorado, will start things off at 7:00 AM Mountain Standard time on 3875.

Have a vintage AM rig? Put it on the air. Don't have vintage AM gear? Come join us anyway and hear how good the old stuff sounds. Everyone is welcome, so long as they're AM capable.

When you check in, tell OJ you heard about it on the Boatanchors list :-)

Scott Turner KG0MR scott@lvld.hp.com

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: "Leigh Bassett" <leighb@us.net>
Subject: TMC SBE-2 info
Message-ID: <57871.leighb@mail.us.net.>

Hi, All,

I have a Model SBE-2A exciter, serial number 270xx, made by The Technical Material Corporation (TMC). The exciter puts out 1 watt CW or 2.5 watts PEP from a 6146!!!

The unit also carries TMC Model Number A-1516A, and it is nomenclatured as AN/URA-23A. This exciter was the companion to the GPR-90 receiver. Both units are shown in a TMC ad on page 61 of the 1955(?) ARRL handbook.

I'm looking for any info on the exciter and associated power supply PP-1769/URA-23. Will pay for instruction manuals and similar material.

Thanks in advance.

N. Leigh Bassett - voice: 1 (301) 953-1665 fax: 1 (301) 206-2556
leighb@us.net - snail: PO Box 2509, Laurel, MD 20709 USA
n3oes@amsat.org - finger leighb@us.net for pgp 2.6.2 public key

It's reported that Canter & Siegel search for and archive all articles that contain their names or "Green Card". This .sig is to help them.
--- opinions expressed are those of my computer, and of no-one else ---

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: w7ni@teleport.com (Stan Griffiths)

Subject: Tube Shields

Message-ID: <199511220422.UAA03611@desiree.teleport.com>

> A thing to remember from all this
> garbage, If you have tube sockets that are designed for shields and
> they are missing. (BEWARE). The dam things were put in for a reason.
>
> Al Fritsche
> fritsche@msn.com
>

Yes, they are there for a reason, but the reason MAY NOT BE because a tube shield should be installed over the tube. There are places in Tek scopes, for example, that have tube sockets installed that are made for tube shields that are not supposed to have a shield installed on them.

As I understand it, the reason is that a seven or nine pin miniture tube socket made for a shield actually shields the bottom 1/2 inch or so of the tube without the shield installed. This may be enough in some cases and that is exactly the case in a few scope circuits. Unfortunately, you won't find this documented anywhere since the documentation always seems to discuss what is there and not what is NOT there, ie: the manual will not tell you when a shield is supposed to be left off. (In fact, I don't remember ever seeing anything in any Tek manual I ever read that tells you when a tube shield SHOULD be installed, either.) Probably a good clear original photo of the interior of the particular instrument is the best way to tell. I remember tube shield sockets without tube shields in at least one location in the "A" sweep area of the 530/540 scopes. I will try to document this for future reference.

Why wouldn't you always install a shield, just to be safe? Two reasons I can think of: (1) the additional stray capacity of the tube shield may make it impossible to get the high speed timing right, or (2) tubes run much hotter with a shield on them, maybe too hot.

Seems like there are always two sides to every issue, even apparently one-sided issues like this one . . .

Stan W7NI@teleport.com

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995

From: USSAILIS@forum.phast.umass.edu

Subject: RE Tube tester

Message-ID: <01HXVRVKGI4Y8Y5ZBQ@oitvms.oit.umass.edu>

No tube tester at Automatic Radio Mfg in the late 50s either. We tested tubes by

attaching a "socket saver" to the tube socket of a working radio. Tubes were spot checked by substitution into the radio.

Jim, W1EQ0

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: parker@sol.med.ge.com (Timothy Parker x7-4463)
Subject: Uninitiated joins the ranks
Message-ID: <9511202001.AA00439@pacific.med.ge.com>

Well, in light of my recent purchase over the weekend I decided that it would be a good idea for me to join this list because I have a feeling that I am going to be in need of its help. I bought a Heathkit sb300 receiver and a sb400 transmitter and they are not only my first big radio but also my first exposure to tubes.

They both seem to be in pretty good working order and after gingerly powering them up I have even managed to make a cw contact on 40M with them. The receiver is pretty straight forward but operating the transmitter has me a little edgy since I don't really know what I am doing. Is there anyone out there who owns this radio or something similiar who can give me some tips on tuning the transmitter? I do have the manuals and by following them I have had some success but I don't know exactly what the controls are doing when I twiddle them just that it seems to be working. I am looking for info (either direct or a reference to literature) about what the controls actually do and what plate current is and what ALC is, etc. Well you get the idea. Any tips that can get me started and point me in the right direction would be much appreciated.

A little more about myself...

I just got my Tech Plus license last Summer but I have not actually been on the air much, I am still struggling to get my code up to a point where I don't embarrass myself. I built a 40M qrp rig that seems to work pretty well but I really wanted an all-band radio to play with as well as the phone capabilities. I have a 40M resonant dipole up outside which seems to receive pretty well so as long as I can figure out how to tune it I should be able to send pretty well with it too. I really couldn't afford a newer radio so I figured that the Heathkit would be a good learning experience. I am an electrical engineer so I am not afraid to open it up and work on it as long as I can figure out what's what.

Well, that's about it for now.
Thanks,

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<|
-- |_      _~o  __o          Tim Parker / KB9KIT
-- (o\    _'\<,_\<,_      parker@sol.med.ge.com
-- (*)--(*)/___/ (*)      Wisconsin
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From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: mallick@orion.crd.ge.com (John Mallick)
Subject: Re: Uninitiated joins the ranks
Message-ID: <9511202028.AA03046@orion.crd.ge.com>

Hi Tim!

Welcome to the boatanchor ranks!

Your best bet at understanding things is to get ahold of some of the older ARRL literature for the beginning ham. An ARRL Handbook from the '60's would be a good start. Even better would be the old ARRL publication "Understanding Amateur Radio" which helped me quite a bit when I started out (unfortunately my copy is lost :-()). Someone on the list here may have a good copy to sell, or you can even try your local library.

The old stuff works rather well and at least yo can get in and fix stuff.

73,

John WA1HNL

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... ..      .... ..      .... ..      .... ..      .... ..      .... ..  
John A. Mallick WA1HNL                      E-mail: mallick@crd.ge.com  
GE Corporate Research and Development        Phone: (518)-387-7667 (W)  
Schenectady, NY 12301                       FAX:   (518)-387-7592 (W)  
... ..      .... ..      .... ..      .... ..      .... ..      .... ..
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"Work like hell. Tell everyone everything you know. Close a deal with a handshake. And have fun." --- "Doc" Edgerton

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: nuucp@ig2.att.att.com
Subject: UUCP command execution failed
Message-ID: <9511202005.AA25707@ig2.att.att.com>

Your UUCP remote execution request 'igcA9b45' (11/20-15:05:32) failed on system 'ig2'.
Your request: rmail
Reason for failure: command exited with exit code 64

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Art Moe <artmoe@agora.rdrop.com>
Subject: What to see
Message-ID: <Pine.3.87.9511211938.A1906-0100000@agora.rdrop.com>

I will be in San Francisco, San Jose area starting Nov 25 for a week
would someone like to send me a list of what to see, BA wise or
other things going on.
The XYL says I can spend some of my time looking for goodies.

73's
Arthur Moe Oregon City, Or
A.R.S. KB7WW 45-19-22 N 122-36-37 W CN85
artmoe@agora.rdrop.com At the end of the Oregon Trail

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: pbock@melpar.esys.com (Paul H. Bock)
Subject: WTB: Viking 122 VFO
Message-ID: <9511202210.AA12719@syseng1.se.melpar.esys.com>

WANTED: Johnson Viking 122 VF0: Reasonably clean, complete & unmodified, or restorable.

e-mail to pbock@melpar.esys.com

(1_) Paul H. Bock, Jr. K4MSG Internet: pbock@melpar.esys.com
 |_) Principal Systems Engineer Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from around it....." - anonymous radiotelegraph operator

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: "Hugh D. Stegman" <driver8@red-eft.la.ca.us>
Subject: Re: WWW operations
Message-ID: <9511202307.AA09603@red-eft.la.ca.us>

>years ago and can confirm that celestial navigation is anything but
>accurate. First, the accuracy of your current sighting depends heavily

Granted my father did his practicing on land. At sea he used radio methods like everyone else, but I think the US Power Squadrons liked one to stay in

practice for the hypothetical emergency situation on your typical small vessel out somewhere your typical small vessel probably shouldn't be. He'd been a navigator in the war, which also made him valuable for yacht races because he could crew and still also be able to tell them where the hell they were :-).

My own previous QTH, not my parents' but mine, was within a couple of houses of 34 degrees north. I kept wondering exactly which one was the lucky house. (Had it been mine, I would have taped it off on the floors, probably spray painted the driveway and street too.) I never did figure out how to get that kind of accuracy. There was no differential GPS yet, and I had no anti-spoof, and even then I wonder if GPS alone would be that definitive. We were talking about an order of centimeters here.

It's too late, but you guys have any ideas?

-hugh

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: Michael.J.Knudsen@att.com
Subject: Re: WWV operations
Message-ID: <9511201643.AA04246@bock.ih.att.com>

Neat about that LoVoie WWV rx -- but why doesn't it just receive WWV on 10 MHz as-is?
10 MHz is the one frequency that can usually be depended on 24 hrs a day. At night 5 MHz is better and even 2.5 is usable, but 15 is pretty much gone. But 10 is almost always there.

Sometimes I've even heard the rumored 20 MHz outlet :-)

One thing against the 10 MHz signal, as Bill mentioned -- you get the nice lady from KH6-land in there with Mr. Colorado, and the phasing makes it hard to check the drift in your reference.
73, mike k w9nrd

From boatanchors@theporch.com Tue Nov 21 13:40:00 1995
From: bill@texan.frco.com (William Hawkins)
Subject: Re: WWV operations
Message-ID: <9511210702.AA08121@texan.frco.com>

Michael says,
"Neat about that LoVoie WWV rx -- but why doesn't it just receive WWV on 10 MHz as-is?"

Ah, that tricky little receiver has a crystal (in an oven) 4.525 kc local oscillator. A 475 kc IF amp is followed by a 475 kc crystal filter (also in an oven). The IF signal is doubled to 950 kc, and the local oscillator is doubled to 9050 kc. The two are mixed to get 10000 kc, which drives the phase shifter to spin the CRT beam at 600 million RPM. You can't do that with 10 MHz as-is. To use it at 15 MHz, you have to have a standard that the LaVoie multiplies up to 10 MHz. That signal is mixed with the 15 MHz to get 5 MHz, and the above mixing magic is performed again. The standard has to be pretty good because of the 475 kc crystal filter.

Bill Hawkins

From boatanchors@theporch.com Wed Nov 22 06:08:00 1995
From: Michael.J.Knudsen@att.com
Subject: Re: WWV operations
Message-ID: <9511211636.AA04673@bock.ih.att.com>

OK, neat-o. LaVoie must've hired an engineer away from Racal to come up with a trick like that :-)
First I'd heard of an xtal *filter* in an oven.
I thought the carrier filter in the CV-157 was pretty tight (less than 100 Hz BW) and it's not temp-controlled. However, it runs at a mere 100 KC so maybe not as critical.

73, mike k w9nrd